

AMENDMENTS TO THE CLAIMS

1. (Original) A power conversion apparatus for a non-linear load, comprising:

a pair of input terminals for connection to a DC voltage source;

a first and a second capacitor connected in series coupled to said pair of input terminals;

a first and a second diode coupled in parallel with said first and second capacitors respectively such that the diodes are reverse biased under said DC voltage source;

an inductor coupled to a first node connecting said capacitors and diodes;

a transformer comprising at least one primary winding and two secondary windings, said transformer having its primary winding coupled to said inductor and its secondary windings coupled in series at a second node, said secondary windings being constructed in a way to produce voltages with opposite polarities with respect to said second node coupling these two windings;

a third terminal coupled to said primary winding of said transformer, for connection to a pulsating voltage source, such voltage source charging or discharging said first and second capacitors within one pulsating cycle; and

a non-linear load coupled to said secondary windings for electrical power.

2. (Original) A power conversion apparatus for a non-linear load, comprising:

a pair of input terminals for connection to a DC voltage source;

a first and a second capacitor connected in series coupled to said pair of input terminals;

a first and a second diode coupled in parallel with said first and second capacitors respectively such that the diodes are reverse biased under said DC voltage source;

a first node connecting said capacitors and diodes;

a transformer comprising at least one primary winding and two secondary windings, said transformer having its primary winding coupled to said first node and its secondary windings coupled in series at a second node, said secondary windings being constructed in a way to produce voltages with opposite polarities with respect to said second node coupling these two windings;

a third terminal coupled to said primary winding of said transformer, for connection to a pulsating voltage source, such voltage source charging or discharging said first and second capacitors within one pulsating cycle; and

a non-linear load coupled to said secondary windings for electrical power.

3. (Currently Amended) A power conversion apparatus for a non-linear load, comprising:

a pair of input terminals for connection to a DC voltage source;

a first and a second diode connected in series and coupled to said DC voltage source such that each diode is reverse biased under said DC voltage source;

a first capacitor connected in parallel to either of the said diodes;

an inductor coupled to a first node connecting said diodes;

a transformer comprising at least one primary winding and two secondary windings, said transformer having its primary winding coupled to said inductor and its secondary windings coupled in series at a second node, said secondary windings being constructed in a way to produce voltages with opposite polarities with respect to said second node coupling these two windings;

a third terminal coupled to said primary winding of said transformer, for connection to a pulsating voltage source, such voltage source charging or discharging said first capacitor and ~~second capacitors~~ within one pulsating cycle; and

a non-linear load coupled to said secondary windings for electrical power.

4. (Original) The apparatus according to claim 1 further comprising means to couple said node joining said transformer secondary windings to one of the said input terminals.

5. (Original) The apparatus according to claim 2 further comprising means to couple said node joining said transformer secondary windings to one of the said input terminals.

6. (Original) The apparatus according to claim 3 further comprising means to couple said node joining said transformer secondary windings to one of the said input terminals.

7. (Original) The apparatus according to claim 1 having a discharge lamp as said non-linear load, further comprising a capacitor at said lamp load terminals to facilitate lamp operations.

8. (Original) The apparatus according to claim 2 having a discharge lamp as said non-linear load, further comprising a capacitor at said lamp load terminals to facilitate lamp operations.

9. (Original) The apparatus according to claim 3 having a discharge lamp as said non-linear load, further comprising a capacitor at said lamp load terminals to facilitate lamp operations.

10. (Original) The apparatus according to claim 1 having a discharge lamp as said non-linear load, further comprising:
two series capacitors at said lamp load terminals to facilitate lamp operations;
a node coupling said two series capacitors; and
means to couple said node to one of said input terminals.

11. (Original) The apparatus according to claim 2 having a discharge lamp as said non-linear load, further comprising:
two series capacitors at said lamp load terminals to facilitate lamp operations;
a node coupling said two series capacitors; and
means to couple said node to one of said input terminals.

12. (Original) The apparatus according to claim 3 having a discharge lamp as said non-linear load, further comprising:
two series capacitors at said lamp load terminals to facilitate lamp operations;
a node coupling said two series capacitors; and
means to couple said node to one of said input terminals.

13. (Original) The apparatus according to claim 1, further comprising:
means for controlling the frequency of said pulsating voltage source coupled to said third terminal for control of output power.

14. (Original) The apparatus according to claim 2, further comprising:

means for controlling the frequency of said pulsating voltage source coupled to said third terminal for control of output power.

15. (Original) The apparatus according to claim 3, further comprising:
means for controlling the frequency of said pulsating voltage source coupled to said third terminal for control of output power.

16. (Currently Amended) A power conversion apparatus, comprising:
a rectifier module for connection to an AC source and having a pair of output terminals which deliver a direct current;

a pair of series switches coupled to said pair of rectifier module output terminals for acceptance of said direct current, switching of said switches produces a pulsating DC source at a first node;

means for coupling said first node with pulsating DC to a primary winding of a transformer, wherein said transformer comprises two secondary windings, said transformer having its primary winding coupled to an inductor and its secondary windings coupled in series at a second node, wherein the secondary windings are coupled with the primary winding to produce voltages of opposite polarities with respect to said second node~~the third terminals in the apparatus according to claim 1;~~
and

means for coupling the output terminals of said rectifier module to a first and a second capacitor connected in series at a third node, each capacitor coupled in parallel with a respective diode such that the diodes are reverse biased under said rectifier module, and the inductor is coupled to the third node~~the input terminals in the apparatus according to claim 1.~~

17-18. (Canceled).